The above are example principles. Many embodiments can be made.

We claim:

1. A method for analyzing the gait of an individual wearing a left shoe and a right shoe, the method including the steps of:
(a) acquiring data from a first array comprising a plurality of shear sensors configured for placement in a left shoe and from a second array comprising a plurality of shear sensors configured for placement in a right shoe, the acquired data being separated into at least two separate gait phases for each array;
(b) comparing at least a portion of the acquired data to a baseline condition for each gait phase; and
(c) categorizing the sensors in each array, or a group of sensors in each array, into one of at least two uniformity categories for each gait phase based on the comparison of the acquired data to the baseline condition.

2. The method according to claim 1, wherein the at least two separate gait phases for each array comprises a heel strike gait phase, a mid-stance gait phase, and a toe-off gait phase.

3. The method according to claim 1, wherein the baseline condition comprises data derived from a baseline test of the individual's gait, data derived from a previous analysis of the individual's gait, pressure data derived from calculated normal gait values for the individual, or data derived from the mean value of a corresponding pair of sensors or group of sensors in each array.

4. The method according to claim 1, wherein the step of comparing the data acquired relating to each sensor or a group of sensors in the arrays to a baseline condition includes comparing the acquired data to at least one deviation threshold value of the baseline condition.

5. The method according to claim 1, wherein a deviation threshold value of the baseline condition is defined for each gait phase.

6. The method according to claim 1, further comprising:
(a) creating a graphical output based on the uniformity category into which each sensor or group of sensors has been placed, the output showing at least one entire gait cycle wherein each gait phase is individually represented by a right footprint and a left footprint.

7. The method according to claim 6, wherein:
(a) the graphical output shows shaded, patterned or colored areas correlating to the uniformity category for each shear sensor on each footprint for each gait phase in the gait cycle, the shaded, patterned or colored areas also being shown on each footprint at a location corresponding to the actual sensor location within the shoe.

8. The method according to claim 7, wherein each shaded, patterned or colored area is blended or transitioned together with an adjacent shaded, patterned or colored area.

9. The method according to claim 8, wherein the graphical output further includes showing a value for shear stress for each gait phase.

10. The method according to claim 9, wherein the graphical output further includes showing a longitudinal component and a lateral component for the shear stress value.

11. The method according to claim 10, wherein the shear stress and component values are shown with arrows.

12. The method according to claim 11, wherein the graphical output further includes a torque value arrow for each gait phase.

13. The method according to claim 12, wherein the graphical output further includes a torque value arrow for each gait phase.

14. A method for analyzing the gait of an individual wearing a left shoe and a right shoe, the method including the steps of:
(a) acquiring data from a first array comprising a plurality of pressure sensors configured for placement in a left shoe and from a second array comprising a plurality of pressure sensors configured for placement in a right shoe, the acquired data being separated into at least two separate gait phases for each array;
(b) comparing at least a portion of the acquired data to a baseline condition for each gait phase; and
(c) categorizing the sensors in each array, or a group of sensors in each array, into one of at least two uniformity categories for each gait phase based on the comparison of the acquired data to the baseline condition.

15. The method according to claim 14, wherein the at least two separate gait phases for each array comprises a heel strike gait phase, a mid-stance gait phase, and a toe-off gait phase.

16. The method according to claim 14, wherein the baseline condition comprises data derived from a baseline test of the individual's gait, data derived from a previous analysis of the individual's gait, pressure data derived from calculated normal gait values for the individual, or data derived from the mean value of a corresponding pair of sensors or group of sensors in each array.

17. The method according to claim 14, wherein the step of comparing the data acquired relating to each sensor or a group of sensors in the arrays to a baseline condition includes comparing the acquired data to at least one deviation threshold value of the baseline condition.

18. A method for analyzing the gait of an individual wearing a left shoe and a right shoe, the method including the steps of:
a. acquiring data onto a computerized storage device:
i. the acquired data comprising sensor and time information being from a first array of sensors disposed in a left shoe and a second array of sensors disposed in a right shoe;
ii. each sensor in the first array having a corresponding and similarly located sensor in the second array that together form a sensor pair;
b. creating a data evaluation set, including the steps of:
i. parsing at least some of the acquired data into at least two separate gait phases for each array;
ii. calculating a mean value for each sensor for each similar gait phase; and
iii. calculating a mean value for each sensor pair for each similar gait phase;
iv. analyzing the data evaluation set, including the steps of:
v. comparing, for each gait phase, the mean value for each sensor to the sensor pair mean value and to a mean deviation limit value; and
vi. categorizing each sensor into one of at least two uniformity categories for each gait phase on the basis of the comparison; and
c. creating a graphical output based on the category into which each sensor has been placed, the output showing at least one entire gait cycle wherein each gait phase is individually represented by a right footprint and a left footprint.

19. The method according to claim 18, wherein the first array of sensors and the second array of sensors include shear stress sensors.